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DEPARTMENT OF TRANSPORTATION

Pipeline and Hazardous Materials Safety Administration

49 CFR Part 192

[Docket ID PHMSA-2013-0161]

Pipeline Safety: Class Location Requirements

AGENCY: Pipeline and Hazardous Materials Safety Administration (PHMSA), DOT.

ACTION: Notice.

SUMMARY: PHMSA is seeking public comment on whether applying the integrity management program (IMP) requirements, or elements of IMP, to areas beyond current high consequence areas (HCAs) would mitigate the need for class location requirements for gas transmission pipelines.

Section 5 of the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 requires the Secretary of Transportation to evaluate and issue a report on whether IMP requirements should be expanded beyond HCAs and whether such expansion would mitigate the need for class location requirements.

DATES: The public comment period for this notice ends **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER.]**

ADDRESSES: You may submit comments identified by the Docket ID PHMSA-2013-0161 by any of the following methods:

- E-Gov Web Site: <http://www.regulations.gov>. This site allows the public to enter comments on any Federal Register notice issued by any agency. Follow the instructions for submitting comments.
- Fax: 1-202-493-2251.
- Mail: Docket Management System, U.S. Department of Transportation (DOT), 1200 New Jersey Avenue, SE, Room W12-140, Washington, DC 20590.

Hand Delivery: DOT Docket Management System, Room W12-140, on the ground floor of the West Building, 1200 New Jersey Avenue, SE, Washington, DC between 9:00 a.m. and 5:00 p.m., Monday through Friday, except Federal holidays.

Instructions: Identify the Docket ID at the beginning of your comments. If you submit your comments by mail, submit two copies. If you wish to receive confirmation that PHMSA has received your comments, include a self-addressed stamped postcard. Internet users may submit comments at <http://www.regulations.gov>.

Note: Comments will be posted without changes or edits to <http://www.regulations.gov> including any personal information provided.

Privacy Act Statement: Anyone may search the electronic form of all comments received for any of our dockets. You may review DOT's complete Privacy Act Statement in the Federal Register published April 11, 2000, (65 FR 19477).

FOR FURTHER INFORMATION CONTACT: Mike Israni at 202-366-4571 or by email at mike.israni@dot.gov.

SUPPLEMENTARY INFORMATION:

Section 5 of the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 requires the Secretary of Transportation to evaluate and issue a report on whether IMP requirements, or elements of IMP, should be expanded beyond HCAs and, with respect to gas transmission pipeline facilities, whether applying IMP requirements to additional areas would mitigate the need for class location requirements. The 2011 Act requires that in conducting the evaluation, the Secretary shall consider, at a minimum, the following:

- (1) The continuing priority to enhance protections for public safety.
- (2) The continuing importance of reducing risk in high consequence areas.
- (3) The incremental costs of applying integrity management (IM) standards to pipelines outside of high-consequence areas where operators are already conducting assessments beyond what is required under chapter 601 of Title 49, United States Code.
- (4) The need to undertake IM assessments and repairs in a manner that is achievable and sustainable, and that does not disrupt pipeline service.
- (5) The options for phasing in the extension of IM requirements beyond high-consequence areas, including the most effective and efficient options for decreasing risks to an increasing number of people living or working in proximity to pipeline facilities.
- (6) The appropriateness of applying repair criteria, such as pressure reductions and special requirements for scheduling remediation, to areas that are not high-consequence areas.

Class Location

Regulations for gas transmission pipelines establish pipe strength requirements based on population density near the pipeline. Locations along gas pipelines are divided into classes from 1 (rural) to 4 (densely populated) and are based upon the number of buildings or dwellings for human occupancy. Allowable pipe stresses, as a percentage of specified minimum yield strength (SMYS), decrease as class location increases from Class 1 to Class 4 locations.

Class locations were an early method of differentiating risk along gas pipelines. The class location concept pre-dates Federal regulation of pipelines. These designations were previously included in the ASME International standard, “Gas Transmission and Distribution Pipeline Systems,” (ASME B31.8) from which the initial pipeline safety regulations were derived.

Class location is determined by counting the number of dwellings within 660 feet of the pipeline for 1 mile (for Classes 1-3) or by determining that four-story buildings are prevalent along the pipeline (Class 4). Design factors, which are used in the formula to determine the design pressure for steel pipe and which generally reflect the maximum allowable percentage of SMYS, are 0.72 for Class 1, 0.60 for Class 2, 0.50 for Class 3, and 0.40 for Class 4. Pipelines are designed based on population along their route, and thus class location.

A class location can change as population grows and more people live or work near the pipeline. When a class location changes, pipeline operators must either reduce the pipe’s operating pressure to reduce stress levels in the pipe; replace the existing pipe with pipe that has

thicker walls or higher yield strength to yield a lower operating stress at the same operating pressure; or where the class is changing only one class rating, such as from a Class 1 to Class 2 location, conduct a pressure test at a higher pressure. Operators can apply for special permits to prevent the need for pipe replacement or pressure reduction after a class location changes. Based on certain operating safety criteria and periodic integrity evaluations, PHMSA has approved some class location special permits.

Integrity Management Approach

Gas IM requirements use a different approach to identify areas of higher risk along pipelines. The term “high consequence area” is used to identify pipelines that are subject to ongoing pipeline integrity assessments. HCAs are defined by counting the number of dwellings for human occupancy or identified sites where people congregate or where they are confined, such as a hospital, daycare facility, or a retirement or assisted-living facility, within a calculated impact circle that a potential pipeline failure could affect. Operators must periodically inspect the condition of their pipelines in an HCA and remediate any degradation that might affect the pipeline’s integrity.

Comparison of Class Location and IM Approaches

The class location requirements provide an additional safety margin for more densely populated areas. However, class location does not address the potential reduction of that safety margin over the course of time due to corrosion or other types of pipe degradation. IM

requirements and HCA calculations provide additional safety for more densely populated areas because operators are required to conduct periodic inspections of the pipe and because repair timelines are specified for the anomalies identified within an HCA. Substituting an IM approach for the use of class locations would allow the operation of the pipeline at higher pressures while conducting integrity inspections and remediation to maintain safety.

On August 25, 2011, PHMSA published an Advance Notice of Proposed Rulemaking to seek comments on revising the pipeline safety regulations applicable to the safety of gas transmission and gas gathering pipelines. At that time, PHMSA requested comments on whether existing HCA criteria should be revised to potentially include more mileage or whether IMP requirements should be strengthened or expanded beyond the HCAs.

The comments received on this topic are summarized as follows:

From Industry:

An industry commenter stated that no change to the regulations is needed and suggested applying IM principles to non-HCA areas should be left to industry as a voluntary effort. This commenter maintained that because the current definition is based on sound science and is serving its purpose, no fundamental change is needed.

The Texas Pipeline Association and the Texas Oil & Gas Association commented that no change should be made until the studies required by the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 are completed.

From State Representatives:

The National Association of Pipeline Safety Representatives (NAPSR) suggested that PHMSA eliminate IM requirements and instead require all transmission pipelines to meet Class 3 and 4 requirements. NAPSR suggested that alternatively, PHMSA should revise HCA criteria to include all Class 3 and 4 locations and segments that could affect critical infrastructure.

The Jersey City Mayor's office submitted a petition for rulemaking dated March 15, 2012, contending that the current Class Location system "does not sufficiently reflect high density urban areas, as the regulations fail to contemplate either (1) the dramatic differences in population densities between highly congested areas and other less dense class 4 locations, or (2) the full continuum of population densities found in urban areas themselves." Based on this, Jersey City petitioned PHMSA to add three (3) new class locations, which would be defined as follows:

- A Class 5 location is any class location unit that includes one or more building(s) with between four and eight stories; (design factor – 0.3);
- A Class 6 location is any class location unit that includes one or more building(s) with between 9 and 40 stories; (design factor - 0.2); and
- A Class 7 location is any class location unit that includes at least 1 building with at least 41 stories. (design factor – 0.1)

The Alaska Natural Gas Development Authority stated that their experience has shown that improved pipeline design and construction requirements are needed to assure pipeline integrity. The Authority also commented that design requirements need to accommodate likely

changes in class location, noting that explosive growth in some Alaska areas has resulted in certain class locations rapidly changing from Class 1 to Class 3.

From the Public:

A comment from the public suggested that PHMSA revise the IM requirements to potentially include more mileage (e.g., include entire Class 3 and 4 area in lieu of only the potentially impacted area inside Class 3 & 4) and critical infrastructure. The commenter further stated that PHMSA should expand IM principles to non-HCA areas, improve public awareness and involvement in HCAs, make maps publicly available, redefine class locations for high population areas, clarify Class 4, and establish a Class 5.

The same commenter suggested that IM plans for densely populated areas (Class 4) and for a new Class 5 encompassing cities with population greater than 100,000, be developed in consultation with local emergency responders. The commenter further suggested that these plans should be available for review during the Federal Energy Regulatory Commission's environmental impact study and should be reviewed with local authorities.

Part 192 Regulations Impacted by Class Location

There are indirect or secondary links to class location throughout Part 192. These links include sections that do not specifically mention class location; however, the sections may reference maximum allowable operating pressure (MAOP). If the use of class location

designation were to be eliminated or merged, many regulatory sections will need to be reevaluated. The following Subparts would be affected:

Subpart A—General

Subpart B—Materials

Subpart C—Pipe Design

Subpart D—Design of Pipeline Components

Subpart E—Welding of Steel in Pipelines

Subpart G—General Construction Requirements for Transmission Lines and Mains

Subpart I—Requirements for Corrosion Control

Subpart J—Test Requirements

Subpart K—Uprating

Subpart L—Operations

Subpart M—Maintenance

Subpart O—Gas Transmission Pipeline Integrity Management

PHMSA is inviting comment on the following:

1. Should PHMSA increase the existing class location design factors in densely populated areas where buildings are over four stories?
2. Should class locations be eliminated and a single design factor used if IM requirements are expanded beyond HCAs?
3. Should there only be a single design factor for areas where there are large concentrations of populations, such as schools, hospitals, nursing homes, multiple-story buildings,

stadiums, and shopping malls, as opposed to rural areas like deserts and farms where there are fewer people?

4. Should operators be allowed to increase the MAOP of a pipeline from the present MAOP if a single design factor is created for all levels of population density?
5. If class locations are eliminated and a single design factor used, should that single design factor be applied to existing pipelines:
 - a. Installed before 1970 (pre-Federal regulation);
 - b. That use low-frequency electric resistance welded pipe, electric flash welded pipe, lap-welded pipe, or other pipe manufactured with a seam factor less than 1.0 in accordance with Section 192.113;
 - c. That include pipe without mechanical (strength) and chemical properties reports;
 - d. That include pipe that has not been tested at or above 1.25 times MAOP;
 - e. That include pipe that operates without a pressure test in accordance with the Grandfather Clause in Section 192.619(c);
 - f. That include pipe that is presently operating above the design factor of a Class 1 location due to the Grandfather Clause in Section 192.619(c); and
 - g. That include pipe with external coatings that shield cathodic protection?
6. Should a pipeline that is operated with a single design factor be subject to periodic operational IM measures, similar to the criteria for HCA locations, including:
 - a. Close interval surveys;
 - b. Coating surveys and remediation;
 - c. Stress corrosion cracking surveys (SCC) and segment replacement (if a SCC threat is found and not remediated);

- d. An ongoing monitoring program for DC currents and induced AC currents in high-voltage power transmission line corridors (including proper remediation plans);
 - e. In-line tool inspections (ILI) to inspect for pipe metal loss (corrosion), cracks, hard spots, weld seams, and other integrity threats in steel pipe (ILI tool evaluations for metal loss must use specified-or-greater interaction criteria to ensure defects meet a minimum integrity criterion);
 - f. Repairs to defects within a periodic time interval that is based on maintaining the pipeline design safety factor with a maximum pipe wall loss;
 - g. Pipe surveys of the depth of cover over buried pipelines;
 - h. Data integration of all surveys, excavations, remediation, and other integrity threats; and
 - i. Pipeline remediation based on assessment and data integration findings.
7. Should pipelines where a single design factor is used for establishing the MAOP be required to ensure that:
- a. Pipe seam quality issues are assessed and those pipes with quality or integrity concerns are removed from service;
 - b. Pipe coatings on the pipeline and girth weld joints are non-shielding to cathodic protection;
 - c. Pipe in a cased crossing can be assessed for metallic and electrolytic shorts;
 - d. Pipe defects or anomalies that cause the pipeline to not meet the pipeline's MAOP are remediated based on the design factor of the pipeline with a maximum pipe wall loss;

- e. All girth welds are nondestructively tested at the time of construction;
 - f. Minimum pipeline hydrostatic test pressures, based on MAOP and pipe yield strength, are met;
 - g. Maximum spacing for cathodic protection pipe-to-soil test stations exists;
 - h. Additional safety measures are implemented in areas with reduced depth of cover over buried pipelines;
 - i. Line-of-sight markings on the pipeline are maintained, except in agricultural areas or at large water crossings (such as lakes) where line-of-sight signage is not practical;
 - j. Monthly ground or aerial right-of-way patrols are performed;
 - k. The applicable best practices of the Common Ground Alliance are included in the operator's damage prevention program; and
 - l. The pipeline is incorporated into an IM program as a "covered segment" in a HCA in accordance with Section 192.903, which will include seven-year maximum periodic reassessment intervals according to § 192.939.
8. Should a root cause analysis be required to determine the cause of all in-service and hydrostatic test failures or leaks?
 9. Should pipelines without documented and complete material strength, wall thickness and seam records for pipe, fittings, flanges, fabrications, and valves, in accordance with Sections 192.105, 192.107, and 192.109 be allowed to operate at the single design factor?
 10. Should operators of pipelines that are allowed to operate at the single design factor complete hydrostatic tests as required by Part 192, Subpart J, and maintain records as required in Section 192.517?

11. Should pipelines, under a single design factor, be required to meet additional pipe manufacturing quality controls to minimize defects such as low-strength pipe, steel laminations, and pipe seam defects?
12. Should pipeline construction personnel who would work in areas subject to the single design factor be required to take a construction operator qualification program?
13. For emergency response and pipeline isolation purposes in the event of a rupture or leak, if a single design factor is allowed, what should the maximum spacing be between the mainline valves on a pipeline?
 - a. Should all mainline valves be remotely or automatically activated if there is a rupture or leak on the pipeline?
 - b. If, during a rupture or a leak, the mainline valves are not remotely or automatically activated, what should the maximum time be for a pipeline crew to isolate the mainline section?
14. What should pressure limiting devices be set to for a pipeline operating with a single design factor?
15. If the design factors of class locations were to be eliminated, and a single design factor used instead, what additional design, construction, and operational criteria are required to maintain pipeline safety in urban areas and in rural areas?

Issued in Washington, DC on July 25, 2013.

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Associate Administrator for Pipeline Safety.

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